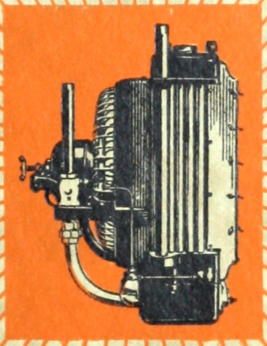
15 8 76

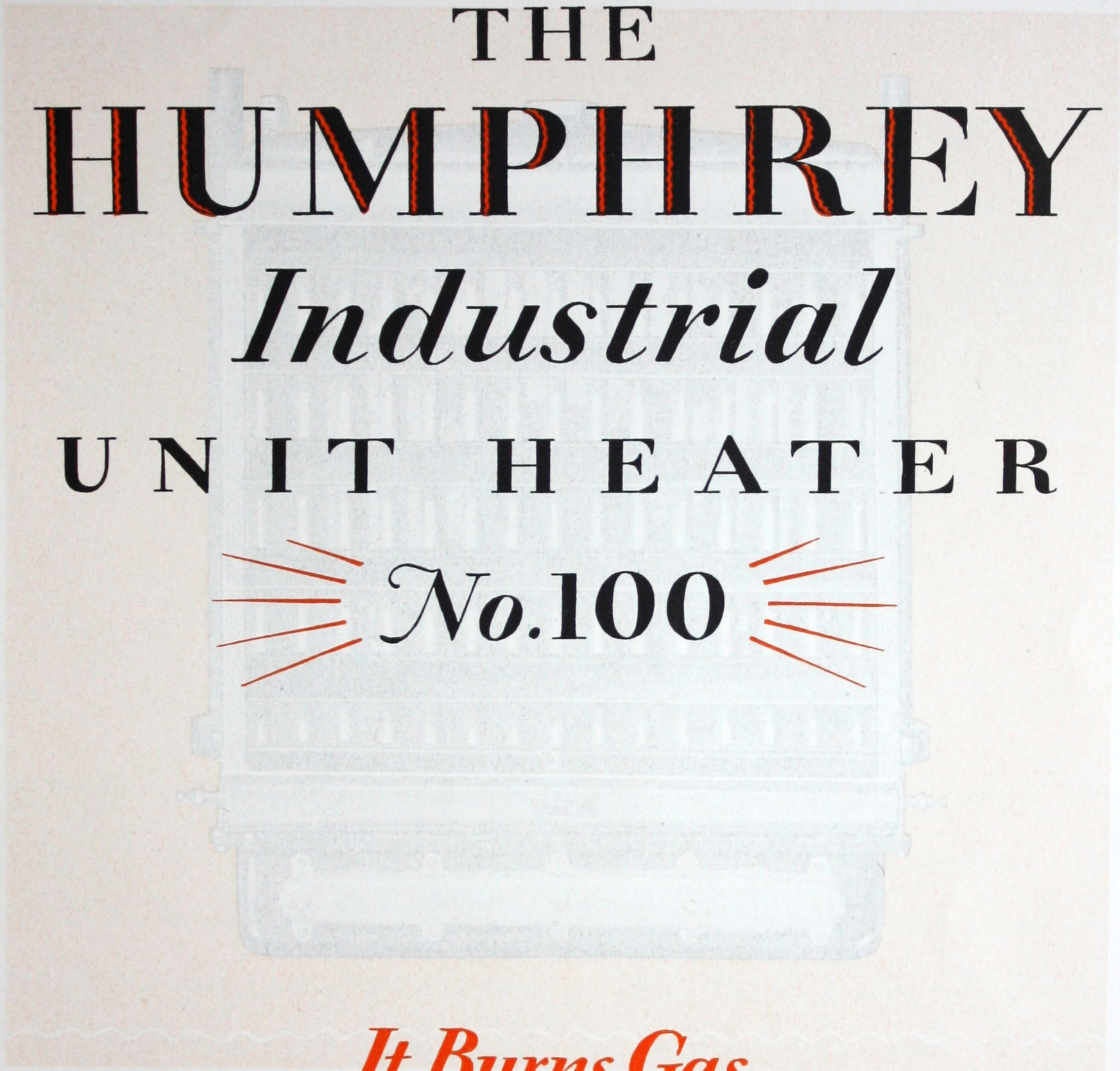
APR 18 193

BARKER INSTITUTE LIBRARY

THE
HUMPHREY
Industrial
UNIT HEATER
No. 100



It Burns Gas



THE HUMPHREY
Industrial
UNIT HEATER
No. 100

It Burns Gas

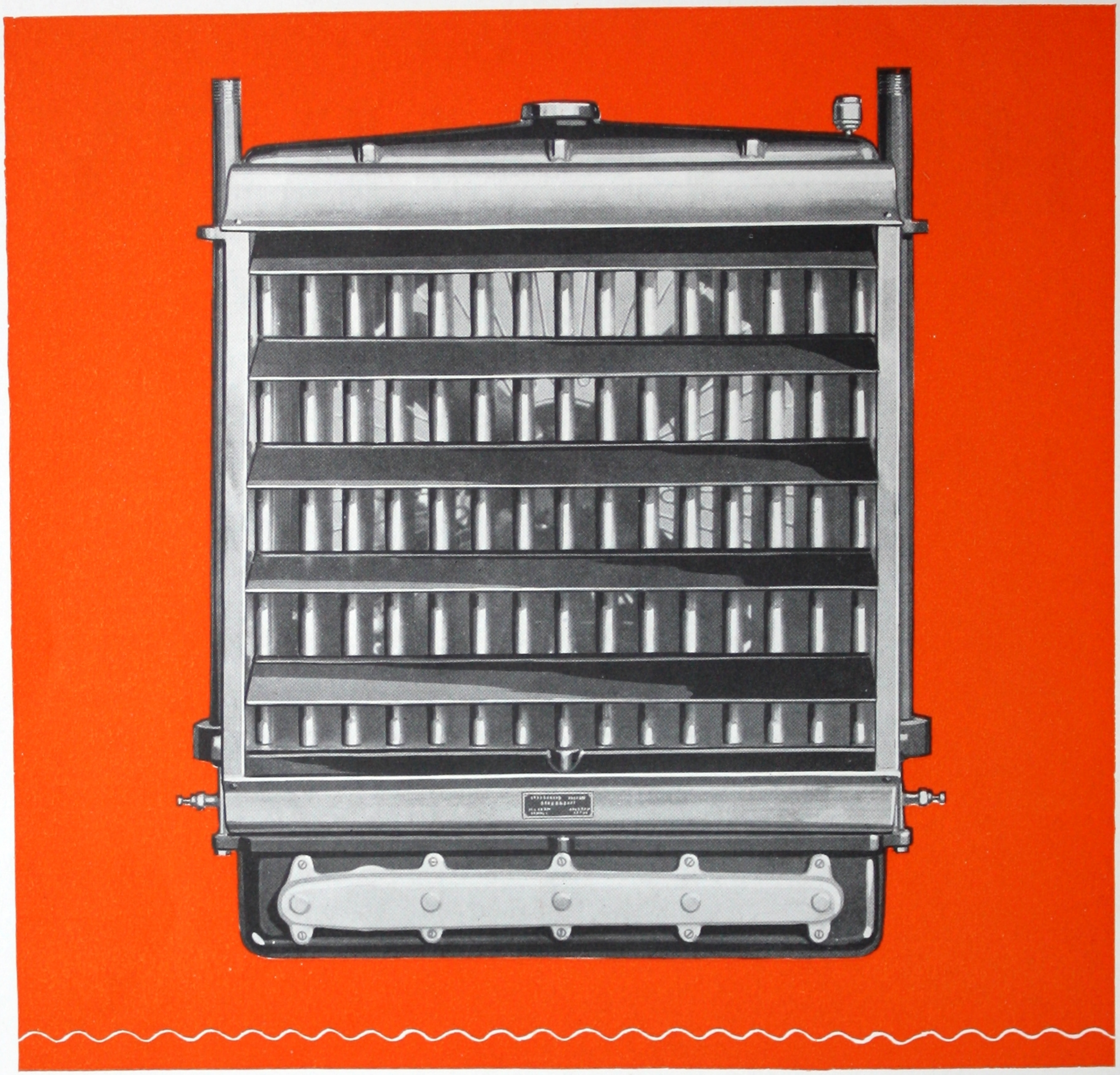
Made By

GENERAL GAS LIGHT COMPANY

KALAMAZOO, MICHIGAN

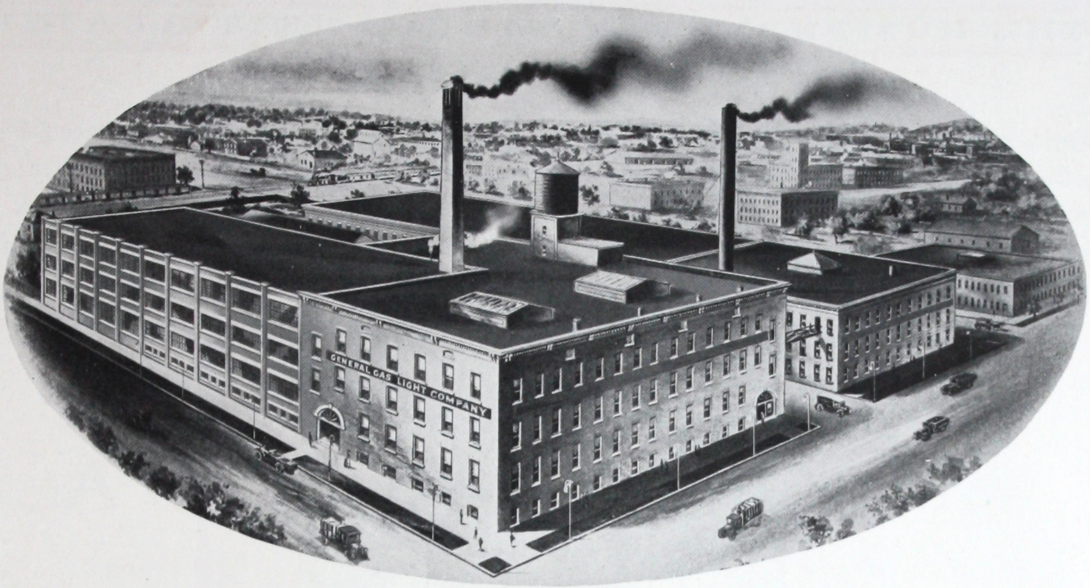
NEW YORK
44 WEST BROADWAY

SAN FRANCISCO
135 BLUXOME STREET



The Humphrey a gas fired self-contained heater that solves most Industrial heating problems. Input rating 100,000 B. T. U. Delivers 1800 cu. ft. of Heated air per minute, equivalent to about 400 sq. ft. of steam radiation.

It Burns Gas

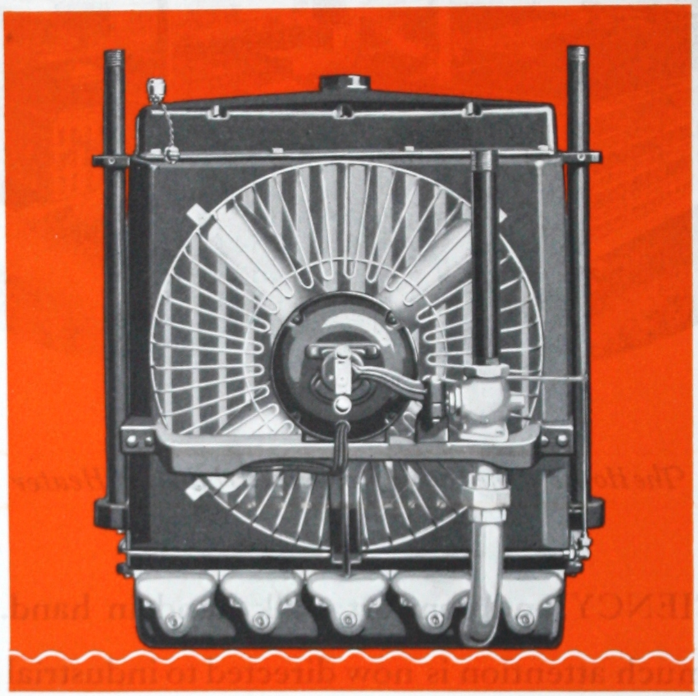


The Home of the Humphrey Industrial Unit Heater

EFFICIENCY and comfort walk hand in hand. That is why so much attention is now directed to industrial heating problems . . . why so much time and thought and money are devoted to their practical solution . . . why the Humphrey Industrial Unit Heater has been developed to deliver directed heat . . . economically, efficiently . . . consistently . . . warming every part of the building as needed.

Unit heaters themselves are not a new departure in industrial heating, but the necessity of steam in the now old-fashioned types has made many installations impossible. The Humphrey requires no steam plant . . . it is as modern as tomorrow . . . . *It Burns Gas*

ID90-B1124 TCF



Rear View Humphrey Industrial Unit Heater showing circulating fan, motor, removable gas burners and connections

Comfort · Efficiency · Economy · Elasticity

The Humphrey Industrial Unit Heater is not merely an *improvement* in industrial heating. It is so radically different from old-fashioned designs and outworn theories that it ushers in a new era of efficient heating which is hailed throughout a thousand industries as a contribution of immeasurable worth to progress.

The advantage of an even warmth at every point is obvious. It improves working conditions and increases the capability of workers. The economy of the Humphrey is almost equally apparent:

1. The initial cost is less than that of a direct radiation heating system;
2. There is a very definite saving of fuel, because a building may be brought to a comfortable temperature so much more quickly, thus shortening the reheating period each day;

3. Otherwise "dead" floor space, occupied by direct radiation heating equipment, is released for profitable use.

Equally important with comfort, efficiency and economy, is the adaptability of Humphrey Industrial Unit Heaters to building changes. This elasticity, especially in this day of rapid expansion and almost overnight additions to plant and equipment, solves each new heating problem without the expensive necessity of enlarging a central heating unit.

A Self-Contained Unit Heater

Heating Plant and Distributor Combined

The Humphrey Industrial Unit Heater embodies, in addition to the usual advantages of such equipment, some entirely new and unusual features. Because it is a gas fired Unit, burning either manufactured or natural gas, it can be installed anywhere. It is fool proof in construction, compact in size and operates at a very high efficiency. It is absolutely automatically controlled and can be operated by a direct control or thermostatic switch.

The Humphrey Industrial Unit Heater is self-contained, the heat being derived from the gas burned within the body of its construction. All that is necessary is a gas supply line and an electric motor connection. A line from your regular lighting current is sufficient for the motor which is rated at 1/6 h.p. 110 volt, 60 cycle and can be furnished for other voltages and cycles.

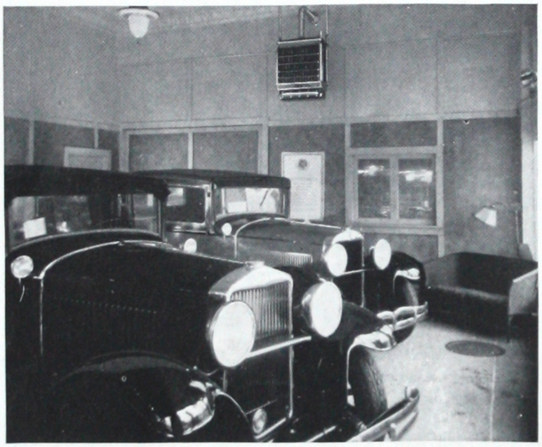
This heater operating at its input rating of 100,000 B.T.U. is equal to 400 feet of steam radiation, but is far more efficient than the ordinary indirect steam radiation because it delivers its heat direct into the lowest plane of the room to be heated. The effectiveness of this heat is a feature that adds immensely to the economy and the efficiency of its operation.

The main control valve, which is operated from a governor on the end of the motor shaft, remains in a closed position except when the motor is running. The moment the motor is started, the governor opens and turns on the gas, which in turn is ignited from two pilots. These pilots control an automatic cutout which, if for any reason the pilots should be extinguished, automatically prevents the motor from operating.

The gas burned is passed up under pressure through 80 radiating tubes, behind which is a motor-propelled fan. Operating at 1150 R. P. M., 1800 cubic feet of heated air per minute are delivered into the room.

For the average installation it is not necessary that these heaters be connected with a flue outlet. The combustion is so perfect that there are no escaping odors.

Where extreme dryness is desirable a flue connection is necessary. Because of the forced draft combustion a 3″ flue pipe is adequate.



A Typical Humphrey suspended installation in an automobile salesroom.

The materials used in this heater are of the finest quality and are warranted to stand many years' use.

The General Gas Light Company, which has been closely affiliated with the gas industry for the past thirty years, has always built quality merchandise. It has never experimented at the customer's expense.

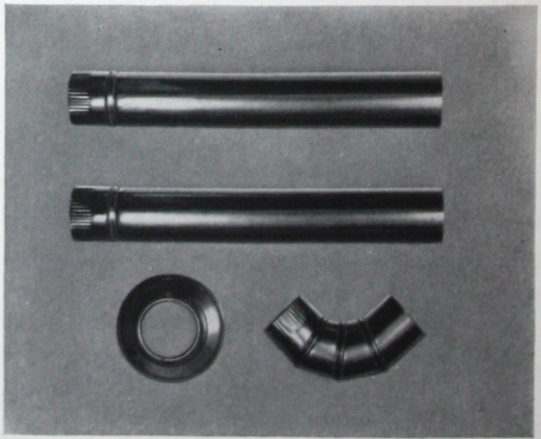
Every part of the Humphrey Industrial Unit Heater is, in the rare event of replacement, independently removable. Thus it is practicable to operate the unit heater over long periods with virtually no attention.

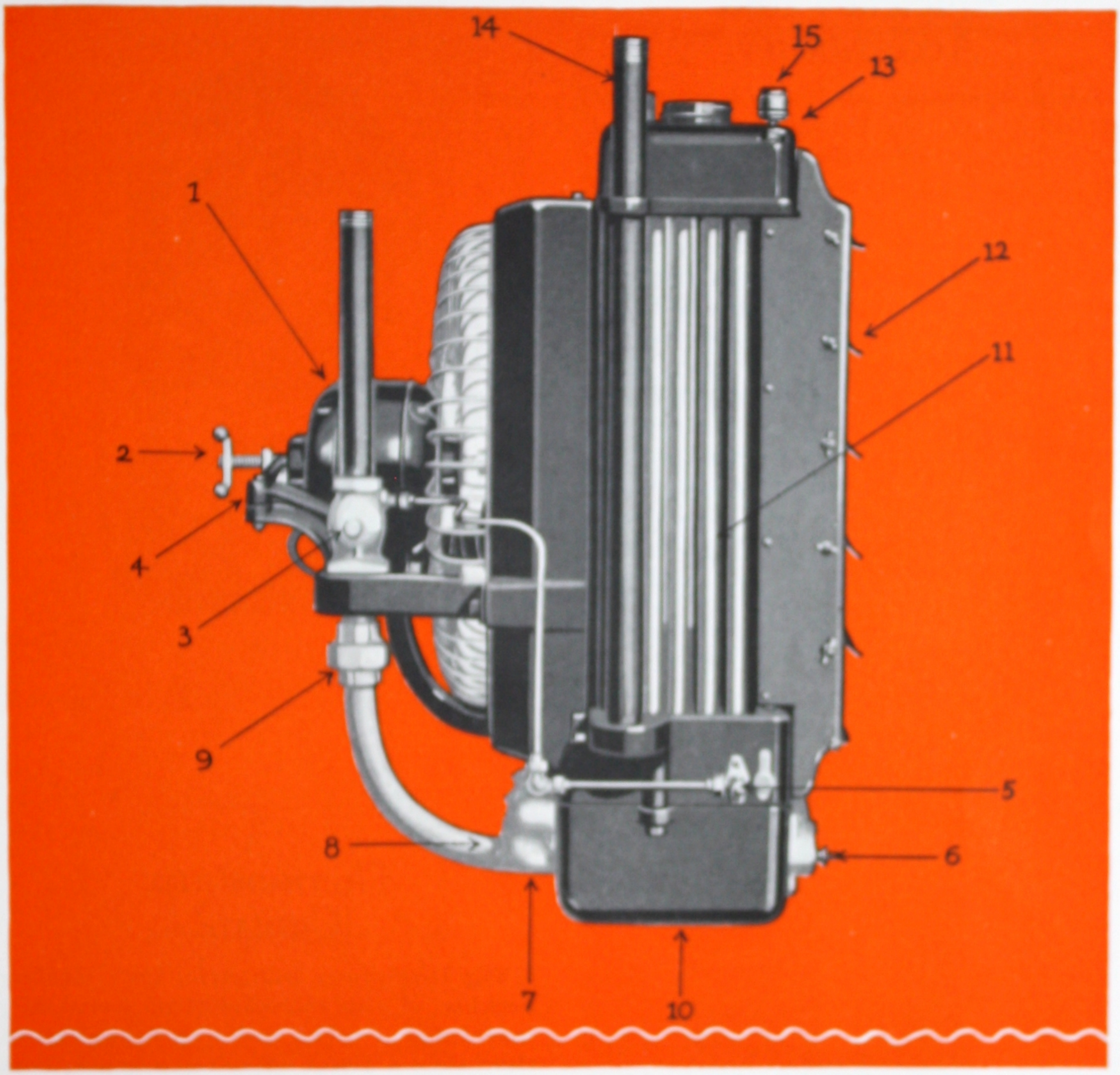
Either natural or manufactured gas can be used in its operation.

* * *

Vent Pipes

A 3″ diameter vent pipe is amply sufficient when necessary to vent the Humphrey Industrial Unit Heater. For neat installation we advise that the heater be connected with nickel plated pipe which we are prepared to furnish. The flue pipe illustrated is 3" in diameter and comes in 20" lengths made of copper, nickel plated and polished.



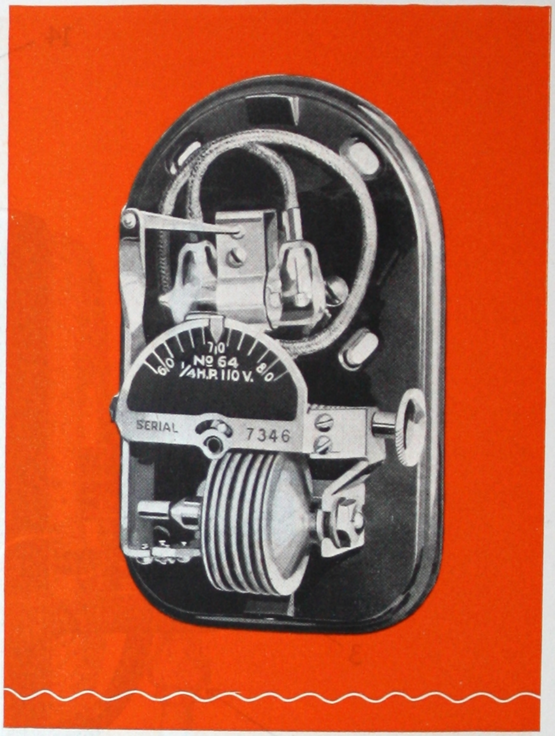


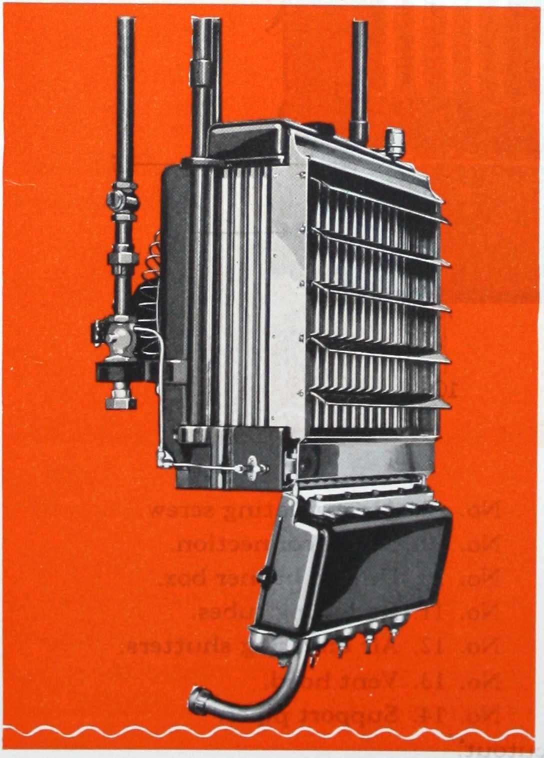
No. 1. Gas supply line.
No. 2. Governor controlling gas supply.
No. 3. Gas valve.
No. 4. Gas valve operating arm.
No. 5. Pilot valve.
No. 6. Removable gas orifice.
No. 7. Removable burners.
No. 8. Air regulating screw.
No. 9. Union connection.
No. 10. Hinged burner box.
No. 11. Radiating tubes.
No. 12. Air directing shutters.
No. 13. Vent hood.
No. 14. Support pipes.
No. 15. Safety pilot cutout.

Efficiency and Accessibility

When operating at its full rating of 100,000 B.T.U., the Humphrey Industrial Unit Heater is 83% efficient . . . this exceptionally high efficiency being obtained from the fact that, since the air is delivered under pressure to the burner chamber, there is a very high rate of combustion. All gas is burned in a closed chamber. No flame is visible. Fire hazards are eliminated.

To maintain this high efficiency, it is important that the radiating tubes are cleaned from time to time. The accompanying photograph illustrates the Humphrey with the burner box lowered, showing the simplicity of construction and the ease with which every part is readily reached for cleaning.

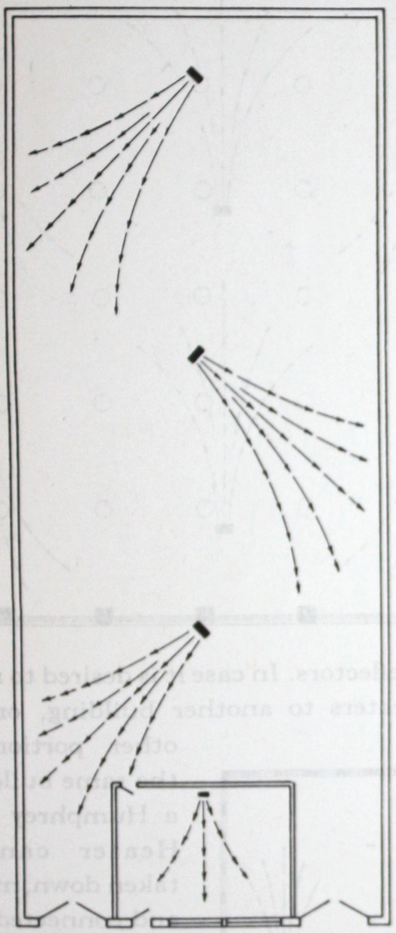


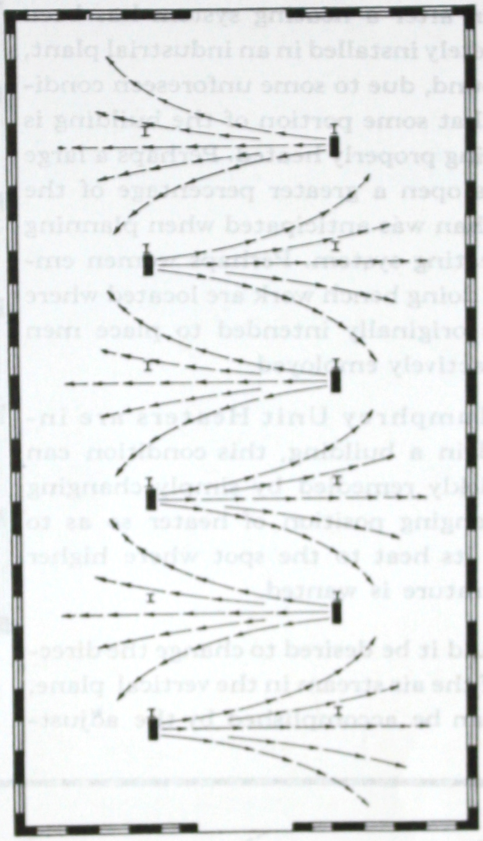


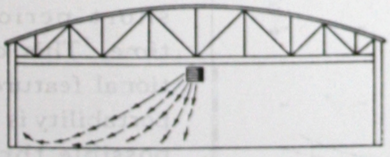
Thermostatic Control

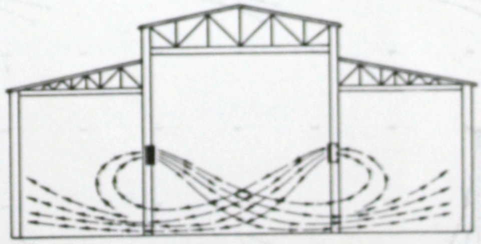
The Humphrey Industrial Unit Heater, because of the circulation of warm air, maintains a more uniform temperature than does a direct radiation system. This temperature may be even further regulated within certain predetermined limits by the use of thermostatic controls. When thermostats are used, they must be such as can stand a make and break on 110 volt current. We recommend only thermostats with a mercoid tube, which we are prepared to furnish.

A special bulletin covers the subject of Humphrey thermostatic controls.

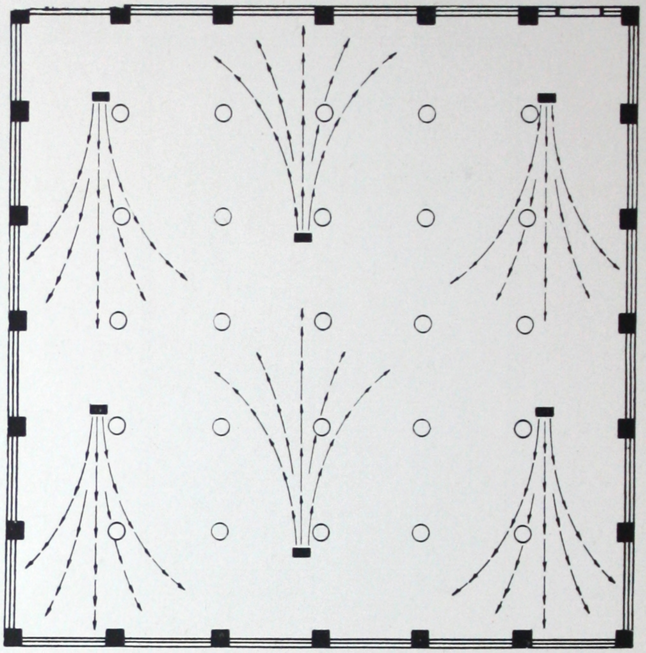








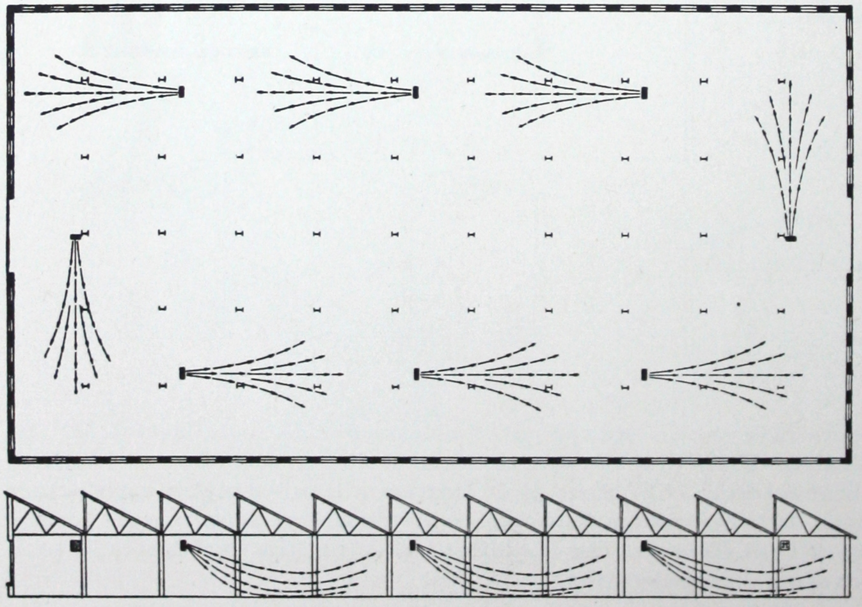
Layouts The layouts here shown are typical of recommended installations for the types of buildings indicated. When properly spaced and installed in accordance with these layouts, the results obtained from Humphrey Unit Heaters will prove highly satisfactory under normal conditions. It is impossible, however, to lay down any definite rules for the arranging and spacing of Unit Heaters. The conditions affecting the heat losses in each building must be given special consideration.



Often after a heating system has been completely installed in an industrial plant, it is found, due to some unforeseen condition, that some portion of the building is not being properly heated. Perhaps a large door is open a greater percentage of the time than was anticipated when planning the heating system. Perhaps women employes doing bench work are located where it was originally intended to place men more actively employed.

If Humphrey Unit Heaters are installed in a building, this condition can be quickly remedied by simply changing the hanging position of heater so as to direct its heat to the spot where higher temperature is wanted.

Should it be desired to change the direction of the air stream in the vertical plane, this can be accomplished by the adjustable deflectors. In case it is desired to move the heaters to another building, or another portion of the same building, a Humphrey Unit Heater can be taken down, moved and connected in a new location in a short period of time. This directional feature and portability is made possible through the light weight and method of suspension of the Humphrey Unit Heater.



Consider these advantages
of the
Humphrey Industrial Unit Heater

1. It is a self-contained unit—generating and distributing its heat at no loss by conduction.
2. No fuel storage required for gas.
3. No boilers to clean.
4. No replacement of grates, tubes, fire walls or parts.
5. No licensed fireman needed for gas.
6. No time lost getting up steam as with coal-fired boiler.
7. No dirt or ashes to remove; labor cost (a considerable item) is eliminated.
8. No danger of strikes of firemen or worry over labor troubles.
9. No stacks to paint, repair or insure.
10. No smoke ordinances to fear.
11. Cost of equipment and installation less than that of steam plant with coal boiler.
12. Saving in space because of minimum necessary equipment.
13. Depreciation of equipment is at a minimum with gas.
14. No handling of coal from cars to boiler room.
15. Less fluctuation of fuel prices.
16. No worry about specification, quality or delivery of fuel.
17. Increased cleanliness.
18. Separate control of individual departments.

Wherever the Humphrey is installed—it gives instant heat. For auxiliary heat it cannot be excelled.

Important When ordering, specify whether heater is to be connected with direct or alternating current—if alternating current specify cycle.

The Humphrey Industrial Unit Heater is Shipped Complete and Ready for Installation.

Shipping Wt. 350 lbs. Net Wt. 232 lbs.